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ABSTRACT

This publication, designed to communicate the history and research activities of the Central District of the American Alliance for Health, Physical Education, Recreation, and Dance, presents summaries of 20 papers. The papers focus on elementary physical education specialists; physical education instruction of classroom teachers; child care providers' knowledge of motor development and attitudes toward children with disabilities; effect of alcohol on reaction and movement times; predictors of bench press strength; verbal feedback; design features of outdoor golf practice facilities; perceived risk and use of abused substances; rural versus urban youth sports participation; wrestlers' eating behaviors; dietary effects during prolonged cycling; effect of isotonic and isokinetic training on leg size and strength; effect of ball color on hitting ability; heart rate assessment during swimming; prediction of cycling performance; physical fitness of Missouri highway patrolmen; relationship between maximal strength cord swim distance and swim performance; hand timing versus automatic timing; elementary physical education evaluation; child safety seats; aquatic safety; and effect of anaerobic exercise on total serum cholesterol. (JDD)

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ED 362 493

THE PROCEEDINGS OF THE ANNUAL MEETING OF THE CENTRAL DISTRICT OF THE AMERICAN ALLIANCE FOR HEALTH, PHYSICAL EDUCATION, RECREATION, AND DANCE.

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This publication is designed to communicate the History, and Research activities of the Central District of the American Alliance for Health, Physical Education, Recreation, and Dance. The abstracts found here in, are presented in presentation order.

Research

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WAPS - 1 ***Case studies of effective elementary Physical Education specialists: relationships among curricular values, teaching strategies and student involvement.*** J. Rauschenbach. ISU, Ames, IA. 50011.

The purpose of this study was to investigate the curricular values of effective elementary physical educators, describe the learning environments they created, and discover the extent to which their curricular values were manifest in the learning environment they created. Six participants with unique teaching styles and strong curricular values were chosen for the study. Using the work of Catherine Ennis and the 5 value orientations identified by Eisner (1974) as a philosophical base, a multiple case study was undertaken natural context. The following methods were used in data collection; formal and informal interviews, nonparticipant observation, the VOI instrument (Ennis and Hooper, 1988), tasks systems analysis, and document analysis. Each participant was interviewed, observed as they taught a fifth grade gymnastics unit, and interviewed again.

Participants represented disciplinary knowledge based and affective curricular values. Unlike the teachers investigated in previous studies (Ennis, 1992), participants who held affective values could consistently articulate them and perform the skills needed to meet their affective goals. Those who held affective goals valued promoting self esteem, striving for personal best, learning cooperation, personal choice, experiencing the joy of movement, and feeling good about one's abilities. They employed the following strategies; teacher/friend relationships, affective cues, praise and awards, debriefing, and group problem solving. A teacher with affective values was likely to hold subject matter values as well and to address these at the beginning of the unit presenting a series of informing tasks related to basic skills.

Participants who held disciplinary knowledge based goals valued learning about sport practice, learning sport skills, and physical fitness. They employed the following strategies to meet their goals; guided practice, direct instructional behaviors, multiple modes of communication, stations, small group projects, and student notebooks.

All of the participants in the study were able to consistently articulate their curricular values and create learning environments that promoted their values.

WAPS - 2 ***The impact of in-service training on the instructional behaviors of classroom teachers in Physical Education.*** S. C. Coulon. UW, Laramie, WY., and G. Reif, UM, Portland, MA.

The purpose of this study was to identify the effect in-service training had on the instructional skills of classroom teacher's teaching physical education. The major question addressed was "What effect does in-service training have on the instructional behaviors of classroom teachers?" Seven experienced classroom teachers, six females and one male, volunteered to participate in the study. Data were collected on each teacher prior to and after the in-service training. The subjects were videotaped either two or three times during each condition of the study. The data collection instrument used for the analysis of selected teaching behaviors was the revised Academic Learning Time-PE (ALT-PE) system (Siedentop, Tousignant, and Parker, 1983). A 5-second observe, 5-second record interval recording technique was employed. The first observation is based on the teaching context level and the second on the learner's involvement level. Frequencies for the ALT-PE categories were tabulated and then converted to percentage figures for each observation by dividing the frequency by the total number of observed intervals. Inferential statistics were computed to further interpret the data obtained from the ALT-PE instrument. Interobserver agreement was established by comparing the scores of two independent observers on a minimum of 25% of the tapes. The analysis of the data obtained across conditions revealed significant differences. After intervention, the percentage of class time spent in subject matter knowledge was greater. Also, teachers spent more class time discussing skill technique, and provided their students more time to practice the discussed skill. Furthermore, the student's were appropriately engaged during practice time. An effective support system between the University and District has been established. Graham (1988) indicated that some of the benefits derived from university-school collaboration are improved preservice and in-service education, improved research consumption, increased parity between university and public schools, and effective assistance in times of urgency. Continued consultation will provide on-going support for the classroom teachers and principals so to assist the district's schools in implementing developmental physical education curriculum.

WAPS - 3 ***A longitudinal case study of preservice student teacher and their use of learning teaching behaviors.*** D. M. Quinn. UW, Laramie, WY 82071

The purpose of this study was to examine the instructional behaviors of preservice teachers across a series of three preservice teaching experiences. The focus of the study was to see how learned teaching behaviors were used and maintained over time. The subjects for this study were two preservice physical education teachers, one male and one female. The subjects were videotaped a minimum of five times during each condition of the study. A minimum of sixteen teaching episodes were analyzed for each subject. Three systematic observation systems were used to code each teaching episode, Academic Learning Time-PE (ALT-PE) system (Siedentop, Tousignant, & Parker, 1983); Qualitative Dimensions of Lesson Introduction, Task Presentation, and Lesson Closure (QDITC) system (Byra, 1992); and event recording for verbal feedback (van der Mars, 1989). Descriptive statistics including percentages and frequencies for all categories of each instrument were generated to

compare the use and maintenance of learned teaching behaviors. The analysis of the data revealed high levels of desirable teaching behaviors by both subjects, throughout all the teaching experiences. However, the highest levels of desirable teaching behaviors were recorded during the first teaching experience. This may be explained by the lower number of students in the class and a smaller teaching load than the other teaching experiences. Also, during the final teaching experience the preservice teachers demonstrated a greater use of negative feedback. This is may be due to the preservice teacher trying to establish more control over their classes. It seems that this information will be useful for teacher educators when formulating strategies on how to best prepare teachers.

WAPS - 4 ***Effects of training programs on child care provider's knowledge of motor development and attitudes toward children with disabilities.*** S. L. Folsom-Meek. Mankato State University, Mankato, MN 56002

The purpose of this study was to determine effects of three training programs on child care providers' knowledge of motor development concepts and attitudes toward children with disabilities integrated into movement-based programs in child-care settings. The study was part of the federally funded Missouri-TIKES grant project conducted from 1989 through 1992. Subjects in the treatment groups were 30 child care providers from private agencies who were randomly selected each year from a pool of applicants interested in participating in the grant project. Control subjects (n = 10) were randomly selected during the third year from a pool of child care providers who indicated an interest in participating in this study. The three treatment groups were: (a) on-site visitation and group meeting workshop (year 1, n = 10), (b) group meeting with videotape and accompanying materials (year 2, n = 10), and (c) videotape only (year 3, n = 10). The award-winning videotape, Moving Together, was developed for use with the grant project. The motor development knowledge instrument was developed to assess knowledge of concepts presented during the training program. The Mainstreaming Attitude Inventory for Day Care Providers was a modification of the Main- streaming Attitude Inventory for Physical Educators (Jansma & Shultz, 1982) and was developed for use with this study. Both instruments were administered prior to and following treatment. Each data set was analyzed by analysis of covariance, with pretest as the covariate. There were no significant differences among the four groups with knowledge of motor development concepts and attitude toward children with disabilities; therefore post-hoc power analyses were conducted. Power analyses revealed that power for motor development knowledge was .23 with a small effect size (.20), and power for attitudes was .99 with a large effect size (.40). Findings regarding motor development knowledge imply that the duration of training programs, although comprehensive in content, was not long enough. Examination of attitude data revealed that child care providers' attitudes were initially high, leaving little opportunity for improvement.

WAPS - 5 ***Effect of Alcohol on Reaction and Movement Times of College Students.*** C. Williams, F. C. Piper, R. A. Johns, J. L. Mayhew, NMSU, Kirksville, MO 63501

The purpose of this study was to determine the effect of different levels of blood alcohol content (BAC) on reaction time (RT), movement time (MT), and total response time (TRT). Twenty-two college student volunteers were randomly assigned to groups required to consume either 2, 4, or 6 beers at 15-min intervals . Thirty minutes following consumption of their last beer, subjects were given 5 trials for RT, MT, and TRT on an apparatus specifically designed to simulate an automobile accelerator and brake pedal assembly. One week prior to the experimental treatment, each subject was given the same test in a sober condition. Alcohol consumption significantly slowed RT by 8.7% and TRT by 6.2% but had no significant effect on MT (1.9% reduction). The number of beers consumed was significantly related to BAC (r = 0.63). Multiple regression analysis indicated that 75% of the explained variance in BAC was determined by the number of beers consumed, with only 25% due to body weight differences. The increase in RT duration was significantly correlated with BAC (r = 0.47). In conclusion, consumption of 2 to 6 beers may not affect simple psychomotor tasks such as MT, but it could significantly impede cognitive abilities such as RT.

WAPS - 6 ***Pushup and bench press repetitions as predictors of 1-RM bench press strength in junior high school boys.*** R. Wallace, T. Wallace, and J. Mayhew. NMSU, Kirksville, MO 63501.

The purpose of this study was to determine the feasibility of using pushups (PU) and bench press repetitions (BPR) to predict 1-RM bench press strength (BP). Twenty-two junior high school boys volunteered to serve as subjects. Each subject was tested for 1-RM bench press using free weights. PU and BPR exercises were performed for one minute or until voluntary fatigue terminated movement. The body mass lifted during PU performance was determined from a weight scale and used with the distances from the floor to the chest to determine pushup lift work (PU-LW). Likewise, the distance from the lifting bar to the chest and the BPR weight were used to determine bench press lift work (BP-LW). There was no significant relationship between the BP and PU-LW (r = 0.29) or between BP and BPR-LW (r = 0.00). The correlation between PU-LW and BPR-LW was not significant (r = 0.40). An alternate form of predicting BP using the weight lifted as a percent of the 1-RM and either PU (r = 0.91) or BPR (r = 0.80) was more successful. Therefore, neither the number of repetitions completed nor the amount of work done during PU and BPR exercises is

effective for predicting BP strength in adolescent boys, but a prediction based on the amount of weight lifted and the number of repetitions completed can be used successfully to estimate BP.

P - 1 ***A comparison of two models of suppression on teacher provided verbal feedback statements.*** P. Brawdy, UW, Laramie, WY 82071.

This study sought to compare the effects of two supervisory models on the types and frequency of teacher-provided verbal feedback statements. Subjects were 16 pre-service physical education students involved in their first formal teaching experience. the investigation was divided into four phases. During Phase I all teachers were audio-videotaped for their first three lessons to establish 1) baseline measures (mean scores) for each group and, 2) sufficient data to equate two comparison groups (Groups A and B). In phase II each group was randomly assigned to a different treatment model of supervision for three lessons. Group A received three supervisory conferences using a direct model of supervision and Group B was given three opportunities for self-assessment. The direct model of supervision involved a supervisory conference where taped lessons were analyzed, strengths and weaknesses were discussed and strategies for improvement were provided by the supervisor. The self-assessment model was based on the student's ability to compare the results of his/her coded lesson to existing standards and develop a personal strategy for improvement without the aid of supervision. During Phase III a second baseline period (no treatments) was employed for three lessons to verify experimental effects. In Phase IV the treatments were reversed for the final three lessons to replicate any experimental effects found. Both supervisory models relied on in formation gained from audio-videotaped lessons. All lessons were audio-videotaped and coded using an event recording instrument designed to measure rate-per-minute scores and types of teacher provided verbal feedback statements. A two-way ANOVA with repeated measures revealed that the effects of direct supervision, on the frequency of both positive specific and corrective specific teacher-provided verbal feedback statements, were significant at the .05 level. The results suggest that structured supervision is an integral part of effectively modifying teaching behaviors.

P - 2 ***An importance performance analysis (IPA) of the design features of the outdoor golf practice facility.*** P. Bartlett, NC, Orange City, IA. 51041

Golf practice facilities should be designed to meet golfers' needs and preferences. Little quantifiable practice facility design features has been published. The purpose of the study was to assess user perceptions of selected design features. Ten hypotheses were tested. An Importance Performance Analysis (IPA) instrument was constructed to measure user perceptions. Thirty design features (attributes) served as the dependent variables. Data was collected at a midwestern golf practice facility, with 179 subjects (131 males, 45 females, and 3 unspecified) participating in the study. Eleven gender and level of seriousness predictor variables were established. An Action Grid was constructed for the entire sample and for each predictor variable group. A 2 x 3 ANOVA and t-Test were used to measure for significant difference in the importance and the performance rating, and content analyses were performed on the responses to the open-ended questions. The IPA for the entire sample suggested that the golf practice facility was adequately designed to meet most of the preferences of the subjects. Significant differences in attribute location on an Action Grid were found between genders and between levels of seriousness. Nine attributes were found to be statistically different at the .05 alpha level and had different quadrant positions when comparing males and females. The differences were the result of the females rating higher the importance of design features related to practice fairway topographical and orientation variations. Four attributes were found to have significantly different positions on an Action Grid when compared by levels of seriousness. Three of the attributes had different positions due to differences in importance ratings. The most serious golfers were found to rate lower the importance of artificial turf hitting stations, higher the importance of a practice fairway oriented into the wind and a practice fairway with an uphill slope, and higher the performance of a practice putting green with undulations. Five of the hypotheses were supported and five were rejected. Design implications were suggested for attracting golfers in general and for targeting specific populations. Several recommendations for future study were made.

P - 3 ***A Survey of Perceived Risk and Use of Abused Substances: A University Sample.*** D. M. Duitsman and S. L. Colbry, ISU, Ames, IA 50011

The perception of risk has been reported to be useful in reducing the prevalence of substance use and in predicting usage patterns and attitudes toward the use of abused substances. However, limited research has been done to assess the perceived risk of an extended selection of abused substances. The purpose of this investigation was to survey the perceived risk and use of a variety of selected substances in a sample of university students. A questionnaire consisting of a perceived risk instrument (Alpha Coefficient .91), a substance use instrument (Alpha Coefficient .82) and a number of demographic questions were administered to undergraduates enrolled in health studies courses. A total of 451 usable questionnaires were completed. Substances tested were tobacco, marijuana, alcohol, barbiturates, heroin, cocaine, PCP, speed, Quaaludes, crank, LSD, black tar, ice, nitrous oxide, crack, rush, caffeine, and petroleum products. Results of the survey indicated that caffeine, alcohol, tobacco, and marijuana had the lowest perceived risk scores and the highest rates of usage. PCP, heroin, and crack had

the highest perceived risk scores and the lowest rates of usage. This observed trend would seem to tentatively reinforce the notion that perception of risk may influence patterns of use. Employing innovative educational modalities specifically designed to impact perception of risk in the classroom and reinforced through the media may prove to be more effective in lowering substance abuse rates than a more traditional knowledge based format.

P - 4 ***Youth Sports Participation: A Survey Comparing Rural Towns with Cities.*** L. Huber and W. Sadler. USD, Vermillion, SD 57069

It was the purpose of this study to identify differences in sports participation among youth in rural South Dakota towns and those from national urban areas. Specifically, participants and non-participants were compared to ascertain motivating factors that influence their choice. Moreover, role models were identified for the purpose of determining their significance in affecting the student's sports involvement.

The sample population (N = 257) consisted of students, grades 6-12, from two southeastern South Dakota class "B" schools. The data were collected simultaneously from each school with the cooperation of classroom teachers during the respective school's homeroom period. The survey was conducted during the Spring of 1992. Comparative data were generated to survey differences between the rural sampling and that of a previous urban study.

A fixed-alternative questionnaire provided a basis for data collection and analyzation. The instrument gathered basic demographical information, then examined reasons as to why certain youth participate, why some youth choose not to participate, and the different socializing agents that affect their decisions. The questionnaire obtained total inventory means and category means for grade levels.

The results of the analysis indicated that participants and non-participants varied widely in their reasons to pursue or not to pursue athletic competition. Primarily, participants wanted to be involved in sport competition to: 1) have fun; 2) get exercise; 3) become physically fit; 4) do something in which they were successful; and 5) to enjoy the excitement of competition. Non-participants were not involved in sport competition because: 1) too much emphasis is placed on winning; 2) the coach uses only certain players; 3) they do not feel good enough to join a team; 4) too much time was involved; 5) of outside job considerations. Significant differences were noted with regards to socializing agents and role models when comparing rural students with urban students. The results will impact individuals involved with youth sports with contemporary rural/urban issues. Further, the results will gauge the point from which participation begins to show a decline and interpretations for such.

P - 5 ***Emphasizing computer literacy in the preparation of Physical Educators.*** G. Kandt and J. Opplinger, FHSU, Hays Kansas 67601.

A presentation detailing computer usage in physical education. Included were display of practical ideas for exercise science and teaching professionals.

P - 6 ***Eating behaviors and weight loss practices of high school wrestlers across one season.*** J. Bespalec and J. E. Donnelly, UNK, Kearney, NE 68849

Weight loss practices of wrestlers has become a concern. The dangers of weight cutting by high schools wrestlers has prompted the ACSM to write a position statement cautioning against unhealthy weight loss (Sports Med. Bull., 1976). This study used a eating disorder questionnaire to examine the eating patterns and weight loss practices of high school wrestlers across one season. High school wrestlers were given a eating disorder questionnaire developed by Lundholm et al (J of Substance Abuse, 1988), along with the EAT-26 eating disorder questionnaire prior to the wrestling season (P1), 1 week prior weight certification (P2) and 1 week prior to district tournaments (P3). The questionnaire was comprised of 50 items to assess; desire to be thinner, restrained eating, emotional cues, external cues, history of being overweight, cold intolerance, concerns about being to thin, exercise behavior, vomiting, and laxative use. Scores for P2 were significantly higher ($p<0.05$) than P1 and P3. Scores for P3 were slightly higher than P1 (NS). The lowest scores were reported for P1. The EAT-26 showed similar results. P2 mean scores (9.70 ± 9.76) were significantly higher ($p<0.05$) than P1 (6.35 ± 6.14) and P3 (7.40 ± 8.03). Eating pattern changes were seen in high school wrestlers across one season. The eating disorder questionnaire may have utility to identify unhealthy weight loss practices across a season.

P - 7 ***Interrelationships of modified physical best times in college men and women.*** K. Bergstrom, J. Mayhew, P. Visich, M. Jackson, J. Bowen and A. Smorynski, NMSU, Kirksville, MO 63501.

The purpose of this study was to evaluate the contributions of the four items in a modified Physical Best testing program to overall fitness of college students. Male (n = 70) and female (n = 70) students enrolled in a wellness course were randomly selected and tested for cardiovascular endurance (9-min run), muscular strength (1-RM bench press/kg), muscular endurance (1-min situps), and flexibility (sit-and-reach). Raw scores were converted to percentiles and summed to yield a total fitness score (TFS). Body composition was evaluated from skinfold measurements. Men were significantly different from women on all physical and performance scores except age. In men, sit-and-reach contributed slightly more (30.4%) than 9-min run (25.1%), bench press/kg (22.3%) or situps (22.2%) to the explained variance in TFS. In women, sit-and-reach contributed

slightly more (31.4%) to the explained variance than 9-min run (29.3%) and situps (27.3%) but substantially more than bench press/kg (12.0%). In men, %fat had a significant negative influence on each individual fitness score except for sit-and-reach. In women, %fat also had a significant negative influence on individual fitness scores except for situps. In conclusion, the four components of a modified Physical Best test make comparable contributions to TFS, and the sum of percentiles for the items can be used to determine overall fitness.

P - 8 ***Effect of pre-exercise diet on metabolic parameters during prolonged cycling in women.*** C. Sebelski, R. Huesgen, A. Johns, J. Arabas, and J. Mayhew, NMSU, Kirksville, MO 63501

The purpose of this study was to examine the effect of a high carbohydrate (CHO) and a high protein (PRO) morning diet on the efficiency of fat substrate utilization during prolonged moderate exercise. Five moderately active women participated in two 50-minute bicycle ergometer rides at 60% of VO_2max 3 hours following ingestion of either a high CHO (80%) or high PRO (80%) breakfast. Treatment order was randomized and separated by at least one week. Dietary intake was controlled for 3 days preceding treatment. VO_2, VCO_2, Kcal, and R measured from an automated metabolic cart were not significantly different between the two diets. A trend toward lower R values during the final 5-minute period of the PRO ride indicated the possibility that a high PRO breakfast may induce greater fat utilization during morning exercise.

P - 9 ***Effect of isotomic and isokinetic training on leg size and strength.*** T. Johntson, S. Hunt, B. Bloyer, and J. Mayhew. NMSU, Kirksville, MO 63501.

Eighteen former male athletes were randomly divided into two groups to determine the effects of isotonic (IT) and isokinetic (IK) resistance training on thigh size and slow-speed torque output. Eight IT subjects trained 3 times/week for 4 weeks using 3 sets of 10-RM in leg extension. Ten IK subjects trained similarly using 3 sets of 10 repetitions in slow isokinetic leg extension (90 deg s^{-1}). Anthropometric dimensions of the leg were taken before and after training to calculate thigh muscle cross-sectional area (CSA). IK torque was recorded pre-and post-training at 90 deg s^{-1}. Both IT and IK training significantly increased torque output by 12.3% and 18.4%, respectively but showed reduced muscle cross-sectional area (CSA) of 3.6% and 2.2%, respectively. Differences in torque and CSA between the groups following training were nonsignificant, indicating that similar IT and IK training velocity produced comparable changes. This finding may contradict the specificity principle and offers support for IT training for muscle rehabilitation.

P - 10 ***Effect of ball color on hitting ability in college softball players.*** B. Morris, D. L. Zimmer, J. Mayhew, and F. C. Piper. NMSU, Kirksville, MO 63501.

The purpose of this study was to determine the hitting ability of college softball players using an optic yellow ball (OYB) and a traditional white (TWB) ball. Twelve female collegiate softball players were tested at the end of the fall training period by hitting 10 balls of each color at each of 3 speeds (40, 45, and 50 mph). Pitching speed was maintained with a automated pitching machine and verified with a radar gun. Ball color and speed were randomly assigned on each of two consecutive days. Hits were scored using a Production Rating Analysis Chart (PRAC). A two-way ANOVA revealed no significant difference in PRAC scores for ball color ($F = 0.29$) and ball speed ($F = 0.29$). Despite the lack of significance, PRAC scores at 45 and 50 mph were 2.4% and 7.8% lower, respectively, for the OYB than for the TWB. At 40 mph, the PRAC score was 3.2% for the OYB. Therefore, it appears that using the OYB will not improve batting ability and may hinder it at faster speeds.

P - 11 ***Reproducibility of heart rate assessment during swimming using an elastic cord.*** J. Capps, C. Abrabas, J. R. Arabas, and R. A. Johns. NMSU, Kirksville, MO 63501.

The purpose of this study was to determine the reproducibility of heart rate (HR) during swimming when subjects were tethered by an elastic cord. Collegiate swimmers (9 M, 17 F) initially determined their maximal freestyle performance distance (MFPD) while tethered. The following day they performed two continuous incremental aerobic swims (3 2-min stages) at 50%, 65%, and 80% of MFPD. Trial 2 was performed during the same day as trial 1 but only after the subject's resting HR dropped below 100 bpm. The correlation between the two trials across the three distances was significant ($r = 0.97$), although trial 2 produced a significantly higher mean HR (trial 1 = 156.7; trial 2 = 158.4 bpm). The statistical difference between the trials may have been due to the small variability at each increment and/or residual fatigue from trial 1. Despite the significant between trial HR means, the high reliability of the technique indicates the potential of the elastic cord to be used as a "swim ergometer".

P - 12 ***Prediction of cycling performance from lactate threshold in tri-athletes.*** L. Wilson, R. A. Johns, and J. R. Arabas. NMSU, Kirksville, MO 63501.

The purpose of this study was to predict cycling split time in a sprint triathalon using onset of blood lactate accumulation (OBLA). Nine experienced tri-athletes (7 M, 2 F) were evaluated within two weeks of competition using a constant resistance (2.5 kp M, 1.5 kp F) speed-incremented bicycle ergometer test. Each subject completed a continuous protocol consisting of 3-min stages beginning at 60 rpm and increasing to 69, 80, and 92 rpm, respectively. Heart rate

(HR) and lactate samples were taken at the end of each stage. OBLA expressed relative to VO_2max was not significantly correlated with 18-mile cycling time from the triathalon competition ($r=-0.42$, $p>0.05$). HR at 92 rpm was non-significantly related with cycling time ($r=0.04$). It appears that factors other than OBLA and HR determine the finishing time on the cycling leg of a sprint triathalon.

P - 13 ***Physical fitness and cardiac risk profiles of Missouri highway patrolmen.*** T. Perry, D. Barts, and J. Mayhew. NMSU, Kirksville, MO 63501.

The purpose of this study was to document the physical fitness level and cardiac risk profile of Missouri highway patrolmen (MSHP). Maximal oxygen consumption (VO_2max) was estimated using a modified Bruce treadmill protocol. Blood pressure was measured at rest and during exercise by auscultation. Benous blood was drawn to measure glucose, total cholesterol (TC), high-density lipporteins (HDL), and triglycerides (TG). Low-density lippoproteins (LDL) were calculated from the equation: LDL= TC - HDL - (TG/5). Muscular strength was assessed using an isometric grip test and an isotonic one-repetition maximum bench press. Body composition was determined from a generalized three-site skinfold equation. Flexibility was evaluated using a modified sit-and-reach test. Even though the mean VO_2max was above average for this age group, blood lipid profiles revealed a significant proportion of the sample had high risk factors for TC (27%), HDL (20%), LDL (40%), and TC:HDL ratio (40%). Percent fat was significantly correlated with HDL ($r = -0.36$) and glucose ($r = 0.36$). Percent fat was non-significantly correlated with TC ($r = -0.02$). Although no resting systolic blood pressures exceeded 140 mm Hg, a substantial number (27%) of th ediastolic pressures exceeded 90 mm Hg. In conclusion, despite above average fitness levels in this sample of MSHP, a significant number of the subjects exhibited cardiac risk factors sufficient to warrant therapeutic intervention.

P - 14 ***Relationship between maximal strength cord swim distance and swim performance.*** S. O'Neill. NMSU, Kirksville, MO 63501.

The purpose of this study was to examine the relationship between maximal stretch cord swim distance (MSD) and swim performance. Fourteen collegiate swimmers (6 males, 8 females, age 18-22 years) were tested after tapering and immediately preceding the final competition of the season. Subjects performed to MSD trials against a surgical rubber tubing (length = 2.85 m, diameter = 1:25 cm) attached to a stationary starting block. Subjects were given 2 minutes recovery between trials. Performance times were taken for the 50-, 100-, and 200-yd freestyle events during a championship competition by an automated timing system. The reliability for MSD was $r = 0.97$ with no significant difference between trials ($p>0.05$). The correlation coefficients between average MSD for the two trials and swim performances were $r = -0.94$, -0.94, and -0.93 for the three distances. Removing the gender difference by partial correlation reduced the correlations between MSD and 50-, 100-, and 200-yd swim performance to $r = -0.28$, -.49, and -0.55, respectively. Only the relationship between 200-yd time remained significant ($p<0.05$). MSD achieved on an elastic cord appears to be a better indicator of middle-distance swim time than it does sprint time in collegiate swimmers. Additional testing should be done to verify this finding.

P - 15 ***Comparison of hand timing with automatic timing in Margaria-Kalamen stair run.*** A. Lawrence, L. Boleach, and J. Mayhew. NMSU, Kirksville, MO 63501.

The purpose of this study was to determine the accuracy of hand-held stopwatches for recording the stair run time during the Margaria-Kalamen test. Forty exercise science majors performed 3 trials of the Margaria-Kalamen test on an ordinary staircase (vertical distance = 1.02 m; angle = 30.5 deg). Automatic time was determined from touch pads attached to a digital timer accurate to 0.001 seconds. Each subject was given a 3-meter approach and sprinted up the stairs three at a time. Three timers recorded the time between the third step and the ninth step using hand-held stopwatches accurate to 0.01 seconds. The median time for each run was recorded, and the average of the 3 trials was used for analysis. Although hand timing was significantly correlated ($r = 0.92$) with automatic timing, the former (0.6068 ± 0.089 s)was significantly faster ($t = 3.93$, $p<0.01$) than the latter 0.633 ± 0.101 s) timing. This resulted in significantly higher ($t = 3.03$, $p<0.01$) anaerobic power output from hand timing ($1,170 \pm 364$ W)compared to automatic timing ($1,125 \pm 338$ W), despite a high correlation between the two ($r = 0.97$). A possible explanation for these findings could lie in the low variability noted for the hand timing method among these subjects. Despite the difference in power output, the consistent performance of the hand timing method offers a viable alternative to the more expensive automatic timing.

P - 16 ***Methods of elementary physical education evaluation in the state of Wyoming.*** P. Brawdy, D. Quinn. UW, Laramie, WY 82071.

This study sought to compare the effects of two supervisory models on the types and frequency of teacher-provided verbal feedback statements. Subjects were 16 pre-service physical education students involved in their first formal teaching experience. the investigation was divided into four phases. During Phase I all teachers were audio-videotaped for their first three lessons to establish 1) baseline measures (mean scores) for each group and, 2) sufficient data to equate two comparison groups (Groups A and B). In phase II each group was randomly assigned to a different treatment model of supervision for three lessons. Group A received three supervisory conferences using a direct model of supervision and Group B was given three opportunities for self-assessment. The direct model of

supervision involved a supervisory conference where taped lessons were analyzed, strengths and weaknesses were discussed and strategies for improvement were provided by the supervisor. The self-assessment model was based on the student's ability to compare the results of his/her coded lesson to existing standards and develop a personal strategy for improvement without the aid of supervision. During Phase III a second baseline period (no treatments) was employed for three lessons to verify experimental effects. In Phase IV the treatments were reversed for the final three lessons to replicate any experimental effects found. Both supervisory models relied on in formation gained from audio-videotaped lessons. All lessons were audio-videotaped and coded using an event recording instrument designed to measure rate-per-minute scores and types of teacher provided verbal feedback statements. A two-way ANOVA with repeated measures revealed that the effects of direct supervision, on the frequency of both positive specific and corrective specific teacher-provided verbal feedback statements, were significant at the .05 level. The results suggest that structured supervision is an integral part of effectively modifying teaching behaviors.

P - 17 ***Body walk.*** S. Mull. NMSU, Kirksville, MO 63501.

Body Walk has developed by the Dairy Council, but each local school must decide how they want to implement it. In the Northwest district of Missouri, we have a group of educators writing a grant for funds to develop the major props and costumes. We have a verbal agreement that we will get the grant. We plan to set the first Body Walk up in a local elementary school in March. Minor props and many of the presentations will be done by 5 & 6 graders. Students in K-4 will participate in the Body Walk activities, by walking through the various body parts. There will be a variety of activities at each body part. I think health educators would be interested in seeing a video and receiving a handout about the Body Walk.

P - 18 ***The Nebraska Cares project: promoting safety by promoting change in hospital discharge policy.*** D. Wolf, D. Tomek, D. Corbin, R. Stacy and D. Greer. Safety and Health Council of Greater Omaha, Omaha, NE 68127.

In spite of a Nebraska law requiring children to ride in safety seats, just over half in the state do so; moreover, the misuse of safety seats is estimated to be 88 - 92 percent in Nebraska, as it is nationwide. NEBRASKA CARES, a statewide child passenger safety education project based in the health care community, uses opinion leaders/key informants to get the state's young children buckled up. The state's 85 hospitals with services for newborns are key to the project's success, reaching parents through staff in the parental setting. In a comprehensive program built on guidelines from the American Academy of Pediatrics (AAP) Committee on Accident and Poison Prevention, every hospital was asked to adopt a written safety seat discharge policy for newborns; provided with on-site staff education (for credit) and video and printed materials for ongoing staff and patient education; given blueprints for intervention programs making safety seats available in the hospital; and surveyed pre and post. Members of the state chapter of the AAP and the Nebraska Academy of Family Physicians support the project in their practices by promoting child passenger safety and distributing patient education materials supplied by NEBRASKA CARES. A statewide public information campaign launched the program. NEBRASKA CARES is funded by a state highway grant and a corporate donation. To date, 88% of hospitals have adopted written safety seat discharge policies for newborns; 95% are providing patient education on the correct use of safety seats; and 88% have safety seats available for loan or giveaway.

P - 19 ***An Evaluation of the Whale Tales Aquatic Safety Program for First Grade Students.*** M. Pesky, M. Hoadley, V. Patri, and P. Vitali of USD, Vermillion, SD. 57069

Statistics show drowning (suffocation in water) as the fourth leading cause of accidentally death in the United States for all ages and the second leading cause of accidental death and years of potential life lost in children. With that in mind, the purpose of this study was to investigate the effect of the Red Cross' new "Whale Tales" program on the knowledge level of first grade students relevant to water safety awareness, as well as evaluate teaching methodologies for implementing the program. Subjects for this study consisted of 127 first grade students (64 males and 63 females) from six elementary classrooms within the Sioux City Community School District. A 35-item pictorial test consisting of six questions was used as the pretest and posttest. The two experimental groups received the treatment which consisted of video instruction (N-43) or a presentation plus video instruction (N=41); the control group (N= 43) received no treatment or intervention. Statistical data was analyzed by use of the paired t-test and ANOVA to show differences between the groups. ANCOVA was used to help eliminate differences that may have existed between the classes prior to the intervention. Significant differences were found at the $p<.0000$ and $p<.0131$ levels between the two experimental groups and the control group; this indicated a significant gain increase in acquired aquatic awareness by the first grade students who received the program, regardless of methodology. In the comparison of experimental methodologies, a significant difference at the $p<.0000$ level indicated method of teaching the program, at least when compared to solely viewing the Whale Tales video. Since this was the first documented research study on the Whales Tales program to date, further research in the evaluation of this particular program and new or existing water safety awareness programs is recommended.

P - 20 ***AN EXPLORATORY STUDY ON THE EFFECT OF ANAEROBIC EXERCISE UPON THE TOTAL SERUM CHOLESTEROL LEVEL OF COLLEGE-AGE FEMALES.*** L. Tentinger, M. Hoadley, J. Richardson, M. Stevenson, P. Vitali. University of South Dakota, Vermillion, S.D. 57069

The purpose of this study was to investigate the effect of a six-week anaerobic conditioning program upon the total serum cholesterol level of college-age female participants. A single group pre-test/ post-test design was utilized in analyzing the existing data for this study.

The female subjects for this study consisted of the entire population of a 1992 college softball team (N=19). The mean age of the subjects was 19.47 years (s.d.=1.07); the mean height was 66.21 inches (s.d.=1.87); and the mean weight was 152.42 pounds (s.d.= 21.21).

The subjects participated in a six-week anaerobic softball conditioning program, whereby all workouts were conducted at the same time each day. The general guidelines for the conditioning program included a five-minute warm up and stretching period, followed by a 45-minute period of intermittent throwing, pivoting, and base running drills. Weight training was also a component of the conditioning program, as well as a five-minute cool down period. The subjects frequency of training was six days per week, with each training bout being approximately 90 minutes in duration.

Total serum cholesterol was evaluated after eight hours fast and rest for pretest and posttest utilizing the standard technique prescribed by the Mannheim Reflotron'. All results were recorded in mg/dl.

The statistical data from the study was analyzed utilizing the Wilcoxon signed-ranks test for matched pairs. This nonparametric testing procedure involved comparing pretest and posttest total cholesterol level values for each subject.

The results of the study indicate that there was not a significant effect ($T_{CV} = 46$; $T = 72$) of a six-week anaerobic conditioning program upon the total serum cholesterol level of college-age female participants. Therefore, it appears that anaerobic exercise does not affect total serum cholesterol in college-age females.

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University Abbreviations

FHSU - Fort Hays State University
ISU - Iowa State University
MSU - Mankato State University
NC - Northwestern College
NMSU - Northeastern Missouri State University
UM - University of Maine
UNK - University of Nebraska-Kearney
USD - University of South Dakota
UW - University of Wyoming